

# Exhibit 5

**Expert Disclosure – Joel DeCapua**  
(February 14, 2025)

Joel DeCapua is a Special Agent with the Federal Bureau of Investigation. He will be called to testify regarding the analysis and tracing of cryptocurrency transactions using blockchain data, including the tracing of criminal proceeds.

**A. Qualifications and Prior Testimony**

Special Agent DeCapua has been an FBI Special Agent since 2009. In 2014, he became a Special Agent on the Cyber Crimes squad of the New York Field Office of the FBI, where he has led numerous investigations into sophisticated network intrusions and federal crimes involving technology. From 2018 through 2022, he was a Supervisory Special Agent in the FBI's Cyber Division, where he managed investigations, with a focus on the laundering of proceeds from network intrusions and ransomware incidents through the use of cryptocurrency. He has conducted cryptocurrency tracing and blockchain analysis in numerous investigations. He has experience in tracing bitcoin and other cryptocurrencies connected to darknet markets, ransomware, and other unlawful schemes, and is familiar with the use of cryptocurrency mixers and different mixing and laundering techniques through his investigative work. Mr. DeCapua's additional qualifications, training, experience, and certifications are detailed in his curriculum vitae, which is attached to this disclosure.

**B. Anticipated Opinions**

Outlined below are the opinions that Special Agent DeCapua is expected to offer as well as the bases and reasons for those opinions:

1. Cryptocurrency transactions are generally recorded on a public ledger known as a blockchain, which is stored on the network of computers that run that particular blockchain. For example, the Ethereum blockchain is stored on the computers, or "nodes," that are part of the Ethereum network. The Ethereum blockchain records the balance held in each Ethereum address and records all ETH transactions between Ethereum addresses. This information includes the date, time, and amount of the transaction, the addresses involved in the transaction, and for ETH transactions, the gas charged by the Ethereum network to validate the transaction. The public nature of the Ethereum blockchain means that the movement of funds over the Ethereum blockchain can be traced across multiple addresses and multiple transactions. This testimony will be based on Special Agent DeCapua's training and experience in numerous cryptocurrency investigations.

2. The value of a cryptocurrency such as ETH can be determined by reference to the pricing data available on various public indexes. Thus, if the time and amount of a cryptocurrency transaction are known, the dollar value of that transaction can be ascertained by reference to publicly available pricing data. Special Agent DeCapua used Etherscan to determine the historical price of the cryptocurrencies involved in the transactions he analyzed in this case. Based on Special Agent DeCapua's training and experience, Etherscan is a widely used and reliable source for the historical price of cryptocurrencies. He also reviewed publicly available information from sources



such as indices published by cryptocurrency exchanges available on Coinmarketcap.com, which in his experience is also a widely used and reliable source for the historical price of cryptocurrencies, at various dates and times, to verify the accuracy of the data available on Etherscan. He will testify as to the market value of ETH and BNB at the time of the transfers involved in his analysis. Special Agent DeCapua prepared spreadsheets capturing the data on which he relied for his analysis, which are being produced along with this disclosure.

3. Special Agent DeCapua conducted cryptocurrency tracing analysis on 31 separate criminal exploits dating from September 2020 to July 2022. Rather than considering all incidents with ties to the Tornado Cash service, Special Agent DeCapua limited his analysis to incidents in which the loss amount exceeded \$5 million. Special Agent DeCapua also limited his analysis to certain well-publicized incidents in which either the victim had publicly stated that it had been victimized or, in the case of rug pulls, the websites or social media accounts advertising the rug pull had been deleted shortly after the incident and the incident was widely reported on. To identify wallet addresses associated with the Tornado Cash service, Special Agent DeCapua used a Medium post outlining a governance proposal from Tornado Cash, an archived document from the Tornado Cash website, and config.js files from the Tornado Cash Github repository. Because this analysis was limited to incidents that met this description and this loss amount, it is almost certainly a substantial underestimate of the volume of criminal proceeds that were laundered through the Tornado Cash service during this time period. The full list of the incidents reviewed by Special Agent DeCapua, and the value of criminal proceeds from each incident that he traced to the Tornado Cash service, is being produced along with this disclosure.

4. For each criminal incident included in the analysis, Special Agent DeCapua reviewed public statements released by the victims describing the nature of the exploit, or in the case of the two rug pull incidents, reviewed public reporting, victim complaints, and an archived version of the now-deleted website that was used to advertise one of the rug pull scams. Based on his review of these sources, Special Agent DeCapua identified wallet addresses tied to the incident and reviewed information about those wallet addresses available on a public blockchain explorer, such as Etherscan, to identify whether there was activity that corresponded to the public descriptions of the incident. Based on Special Agent DeCapua's training and experience, Etherscan is a widely used and reliable source to obtain accurate data from the Ethereum blockchain. He also used blockchain data to trace the funds stolen in these incidents and determine where those funds were transferred. Using reports from victims and other public reports of criminal exploits, and verifying those descriptions based on blockchain data, is a commonly employed method for tracing the proceeds of criminal incidents used by cryptocurrency investigators, and typically allows reliable estimates of how much cryptocurrency was stolen in the incident and where that cryptocurrency was transferred on the relevant blockchain. In addition, for several of these incidents, Special Agent DeCapua reviewed documentation of the incidents that was sent by the victims or by law enforcement to the Tornado Cash founders, or discussions among the Tornado Cash founders about the incident, to confirm that the descriptions in those documents corresponded to the publicly available information about the incident. The materials used by Special Agent DeCapua, including spreadsheets showing the blockchain transactions he identified in his tracing analysis, are being produced along with this disclosure.



5. In total, Special Agent DeCapua concluded that at least \$1.191 billion in criminal proceeds were transferred into the Tornado Cash service between in or around September 2020 and in or around July 2022.

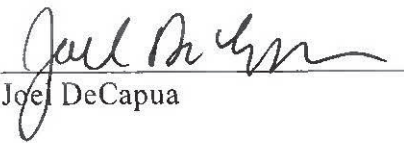
6. When a wallet initiates a transaction on the Ethereum blockchain, the wallet also communicates the amount of gas that it is willing to spend to complete the transaction, which is commonly referred to as the “gas limit.” After the transaction is completed, the blockchain records information both about the gas limit that was initially set and the amount of gas that was actually used, which can be used to identify the “gas ratio” for the transaction. Special Agent DeCapua used a publicly available application programming interface (API) available at infura.io to access data from the Ethereum blockchain, which he used to identify the gas limit and gas ratio for deposits into the Tornado Cash service that involved proceeds of several of the criminal incidents he analyzed in his primary analysis. Based on Special Agent DeCapua’s training and experience, the infura.io API is a widely used and reliable source to obtain accurate data from the Ethereum blockchain. A list of those deposits, the exploit that was the source of those deposits, and the gas limit and gas ratio associated with those deposits, is being produced along with this disclosure.

7. Blockchain data can also be used to identify the total volume of cryptocurrency deposited to and withdrawn from the four Tornado Cash ETH pools. Special Agent DeCapua will provide a summary of the inflows and outflows, and the aggregate balance of the pools, over time, based on the spreadsheet listing these amounts that is being produced along with this disclosure. Special Agent DeCapua will focus on particular date ranges that are connected to the 31 criminal incidents discussed in his primary tracing analysis. The data underlying this analysis was pulled from Etherscan.

8. Special Agent DeCapua will also testify about transactions with funds originating in the Ethereum address 0x098B716B8Aaf21512996dC57EB0615e2383E2f96. In particular, Special Agent DeCapua will discuss the flow of funds from that address into the Tornado Cash pools from in or about April 4, 2022 through in or about May 19, 2022. He will discuss the total volume of ETH, and the dollar value of that ETH, that flowed into the Tornado Cash pools throughout this time period, as well as particularly discussing the value that flowed into the Tornado Cash pools after April 14, 2022. This testimony will be based on a spreadsheet listing all transactions in funds originating in the 0x098B716B8Aaf21512996dC57EB0615e2383E2f96 address, which is being produced along with this disclosure.

### **C. Approval and Signature**

I hereby approve the disclosure of my qualifications, anticipated opinions, and bases for such opinions, as set forth above.

  
Joe DeCapua

**Appendix A: Prior Expert Testimony**

The following is a list of trials in which Special Agent DeCapua testified and was qualified as an expert:

December 5, 18, and 20, 2017	<i>United States v. Tuzman</i> , No. 15-CR-536 (PGG) (S.D.N.Y.)
May 14, 18, and 19, 2021	<i>United States v. Zhukov</i> , No. 18-CR-633 (EK) (E.D.N.Y.)
April 22, 2022	<i>United States v. Hilliard</i> , No. 19-CR-358 (PKC) (E.D.N.Y.)
March 20, 2023	<i>United States v. Mackey</i> , No. 21-CR-90 (AMD) (E.D.N.Y.)
July 23, 2024	<i>United States v. Chang</i> , No. 18-681 (S-2) (NGG) (E.D.N.Y.)

In addition, Special Agent DeCapua testified as a lay witness in the following trial:

April 11, 2024	<i>United States v. Eisenberg</i> , No. 23-CR-10 (AS) (S.D.N.Y.)
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